

# Prenatal exposure to perfluoralkyl substances and childhood hospitalization due to infectious disease

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## OBJECTIVE

To investigate the association between prenatal exposure to perfluoralkyl substances (PFASs) and hospital admission due to infectious disease in children up to 5 years of age.

## CONCLUSION

Prenatal exposure to PFOS and PFOA was associated with hospitalization due to infectious disease. A higher rate of hospitalization was seen for lower respiratory tract infections.

## METHODS

In the Odense Child Cohort, serum concentrations of five PFASs i.e. PFOS, PFOA, PFHxS, PFDA and PFNA were measured in 1699 pregnant women before gestational week 16 in the period 2010-2012. Data on hospital admissions of their children due to infectious disease were collected from the Regional Health Authorities from birth until 2015. Twins and children born preterm (<32 weeks) were excluded.

**Statistics:** Diagnoses were grouped into three categories: upper respiratory tract infections, lower respiratory tract infections and other infections. Associations were investigated using logistic and negative binomial regression models adjusted for maternal educational level and parity.

## DESCRIPTIVE STATISTICS

### Admission to hospital

At least once: 561 (24.5 %)

Respiratory tract infection: 56.5 % of admissions

390 children had 1 admission

106 children had 2 admissions

65 children had 3 or more

### Maternal PFAS concentrations

#### Median (p25-p75)

PFOS: 7.51 (6.13-11.20) ng/mL

PFOA: 1.68 (1.15-2.33) ng/mL

PFHxS: 0.32 (0.21-0.42) ng/mL

PFDA: 0.27 (0.21-0.35) ng/mL

PFNA: 0.70 (0.50-0.91) ng/mL

Measurable in 99% of samples

## RESULTS

A doubling in maternal serum concentration of PFOS and PFOA was

Incidence rate ratio for number of hospitalizations  
due to Dominant, Tract Infection